

Title: Characteriation of hemicellulose based nanocomposite obtained from oil palm biomass for food packaging application.

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In attempt to reduce the environmental problems triggered by the petroleum based plastic waste, attention has been given in the production of biobased polymer known as biopolymer. Hemicellulose is natural polysaccharides which is abundantly available, cheap and demonstrated an excellent potential for food packaging. Abundant biomass residues are regenerated from the oil palm factories and oil palm empty fruit bunch (OPEFB) is an abundantly biomass waste generated annually. Therefore, the use of hemicellulose from OPEFB waste would be fascinating in exertion to utilize and transform this waste to value added products. There are four basic function of food packaging which include communication, convenience, containment and the main function is protection and safety of food product by controlling the factor that will cause deterioration. This research for 'green' and transparent film is the effort to replace the non-renewable and non-environmental friendly films for packaging application. The film has been prepared by casting the film-forming solution of hemicellulose from OPEFB, carboxymethyl cellulose (CMC) with montmorillonite (MMT) as the reinforcing agent. Hemicelluloses used 50%, 60%, 70%, 80%, and 90% alternately with CMC with addition 2% MMT. It exhibits an excellent mechanical performance as a result of high tensile strength compared to pure CMC film. MMT were distributing smoothly presented on the film based on the result scanning electron microscope (SEM). MMT improve the performance of film as enhanced the oxygen permebility and film flexibility had been improved. These observations create an important foundation and potential for biodegradable film in enhances sustainability worldwide context.

Biography

Nadhilah Razak has completed her Bachelor Degree in Food Technology at the age of 23 years from Universiti Malaysia Terengganu and currently as a research assistant also a master student from Universiti Sains Malaysia.

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